contacting said cell with ionizing radiation, whereby the nucleic acid is expressed to produce the radiosensitizing polypeptide and the cancer is treated.

C1 Amt

2. (Twice Amended) The process of claim 1, wherein the nucleic acid encodes a TNF-α.

8. (Twice Amended) The process of claim 1, wherein said nucleic acid is provided by transfection by liposomes, adenovirus or HSV-1.

C2

12. (Amended) A process of sensitizing a cell to the effects of ionizing radiation comprising transfecting the cell with an adenovirus vector construct comprising a nucleic acid that encodes a cytokine, wherein said cytokine is synthesized in and secreted from said cell.

C3

13. (Amended) The process of claim 12, wherein the nucleic acid that encodes the cytokine is positioned under control of a promoter other than an adenovirus promoter.

18. (Amended) A process of radioprotecting a cell from the effects of ionizing radiation comprising:

(a) obtaining a genetic construct comprising a nucleic acid encoding a cell radioprotecting factor operatively linked to a constitutive promoter; and

C4

(b) transfecting a cell with the genetic construct; whereby said radioprotecting factor is expressed and said cell is protected from said effects.

26. (Amended) A process of radioprotecting a cell from the effects of ionizing radiation comprising transfecting the cell with an adenovirus vector construct comprising a nucleic acid encoding a radioprotecting factor in a mammalian cell.

27. (Amended) The process of claim 26, wherein the nucleic acid is positioned under control of a promoter other than an adenovirus promoter.

29. (Amended) A pharmaceutical composition comprising a genetic construct comprising a nucleic acid that encodes a TNF-α operatively linked to a constitutive promoter dispersed in a pharmacologically acceptable carrier, wherein the genetic construct is packaged within an adenovirus particle.

31. (Amended) A method of expressing a radioprotecting or radiosensitizing factor in a mammal comprising administering to the mammal an effective amount of the pharmaceutical composition of claim 29.

36. (Amended) A method of assessing the response of a cell to the constitutive production of radiosensitizing or radioprotecting factors following ionizing radiation comprising:

(a) growing the cell in culture

(b) transfecting the cell with a genetic construct comprising a nucleic acid that encodes the cell radiosensitizing factor or radioprotecting factor operatively linked to a

constitutive promoter, whereby said nucleic acid is expressed to produce the radiosensitizing factor or radioprotecting factor;

(c) exposing the cell to an effective dose of ionizing radiation; and

(d) assessing the response of the cell.

Please add new claims 37 through 42 as follows:

--37. The pharmaceutical composition of claim 29, wherein the adenovirus particle contains a deletion of the E1 region and/or the E3 region of the adenoviral genome.

38. A process of inhibiting growth of a tumor in a host comprising the steps of:

(a) injecting into the tumor a therapeutically effective amount of the pharmaceutical composition of claim 29, and

(b) administering to the host an effective dose of ionizing radiation, whereby the growth of the tumor is inhibited by expression of the nucleic acid encoding a TNF-α and the administration of ionizing radiation.

39. The process of claim 38, wherein the amount of the pharmaceutical composition is between 10^8 and 10^{11} plaque forming units.

40. The process of claim 38, wherein the dose of ionizing radiation is between 50 and 70 Gray.